REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

The claims have been amended for conformity with U.S. practice and to remove reference characters. The claim amendments are considered to be non-narrowing and no estoppel should be deemed to attach thereto. Claim 44 has been newly added and recites features of original claims 1, 40, and 41 in independent form.

Claims 1, 2, 4-7, 12, 15, 26, and 38 stand rejected, under 35 USC §103(a), as being unpatentable over Monroe (US 1,995,620) in view of Shtarkman (US 4,504,044). Claim 3 stands rejected, under 35 USC §103(a), as being unpatentable over Monroe and Shtarkman in view of Fukahori et al. (US 4,899,323). Claims 40-43 stand rejected, under 35 USC §103(a), as being unpatentable over Mouille et al. (US 4,458,862) in view of Monroe. Applicants respectfully traverse.

Claim 1 recites:

A damping structure comprising:
a member defining an internal cavity;
an aggregate which comprises at least solid bodies in contact and which completely fills said internal cavity;
a rigid plate for closing off said internal cavity; and
an elastic means which exerts elastic pressure on said rigid plate so as to constrain said aggregate.

As recited in claim 1, an aggregate of solid bodies completely fills an internal cavity of a damping structure. By contrast to the claimed invention, Monroe discloses that particles 40 only partially fill a casing 10 (see Monroe's Fig. 2). Thus, Monroe does not teach or suggest the claimed feature of an aggregate which comprises at least solid bodies in contact and which completely fills an internal cavity.

Moreover, Monroe's device does not rely on particles 40 to make the vibration inhibitor function. For instance, Monroe's Fig. 1 illustrates an embodiment of the inhibitor that does not include any particles 40. For this embodiment, Monroe discloses that the vibration reduction or damping action is achieved by an inertia member 22 alone (Monroe page 2, col. 2, lines 2-12). Monroe's particles 40 merely correspond to a particular embodiment of the inhibitor working with inertia member 22.

Furthermore, Monroe teaches away from completely filling the internal cavity of the casing with solid bodies. As disclosed by Monroe, it is necessary to provide a space in casing 10 that permits inertia member 22 to move relative to casing 10, so as to achieve the vibration inhibiting functionality (Monroe page 2, col. 1, line 73, through page 2, col. 2, line 22).

More specifically, Monroe teaches that the damping is provided by the compression of a gas within a clearance between

inertia member 22 and casing 10 (Monroe, page 2, col. 2, lines 5-7). As casing 10 moves up or down relative to inertia member 22, air contained within the clearance between inertia member 22 and casing 10 is forced from one side of inertia member 22 to another side (page 2, col. 2, lines 7-11). The frictional resistance provided by the air absorbs energy, thereby producing a damping action. (page 2, col. 2, lines 12-16). Additional damping action is provided by coil spring 20's absorption of energy (page 2, col. 2, lines 16-22).

If Monroe's cavity were filled with solid bodies, then no space would remain for fluidly compressing the gas within the cavity. Therefore, Monroe teaches away from the claimed feature of completely filling the internal cavity with solid bodies.

Also, according to claim 1, an elastic means exerts elastic pressure on a rigid plate to constrain the aggregate. As discussed above, Monroe teaches away from constraining particles 40.

By constraining the solid bodies of the claimed structure, the transmitted vibration is quickly and effectively damped. Thus, the damping structure defined by claim 1 reduces vibrations in all directions (i.e., both longitudinal vibrations and lateral vibrations).

By contrast to the claimed invention, Monroe's inhibitor functions with an inertia member 22 and not with elastically constrained aggregate. As disclosed by Monroe, this inhibitor only reduces longitudinal vibrations (i.e., in a vertical direction) along inertia member 22 (Monroe page 2, col. 1, line 73, through page 2, col. 2, line 22).

Moreover, Applicants' claimed solid bodies provide the damping force. Applicants' plate, which is subject to elastic pressure, is not the inertial mass. By contrast to the claimed structure, Monroe's plate, which is subject to elastic pressure, is also the inertial mass.

Shtarkman discloses a damper, having two housing members, pressurized gas chambers, elastomeric diaphragms, and elastomeric shear springs (Shtarkman col. 4, lines 14-39). It is apparent that Shtarkman's viscous spring damper operates very differently from the damping structure defined by claim 1. Also, Shtarkman discloses that chamber 66 could be only partially filled, rather than completely filled with aggregate (Shtarkman col. 5, lines 44-47). Thus, Shtarkman's viscous spring damper functions well even if the chamber is not completely filled. Moreover, Shtarkman's chambers 28 and 34 are not filled with particles, but with gas (Shtarkman col. 5, lines 28-35).

In accordance with the above discussion, Applicants submit that the combined teachings of Monroe and Shtarkman do not disclose or suggest all of the features recited by claim 1 and the benefits accruing from them. Therefore, allowance of claim 1 and all claims dependent therefrom is warranted.

Claim 15 recites an internal partition, which is partially pierced, that is arranged inside the internal cavity of the damping structure. Monroe and Shtarkman do not disclose or suggest these features. Therefore, allowance of claim 15 is warranted.

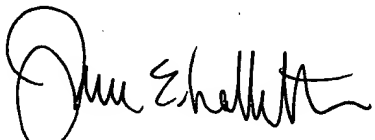
Claim 26 recites features similar to those of claim 1, but further specifies that the damping structure is rigid. Shtarkman does not disclose or suggest rigid housing members (see Shtarkman Figs. 1 and 2). Therefore, allowance of claim 26 and all claims dependent therefrom is warranted.

New claim 44 recites an internal cavity in a suspension bar of a suspension system that is used to form a damping structure. Mouille does not disclose or suggest this feature. Therefore, allowance of claim 44 is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



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JEL/DWW/att

James E. Ledbetter
Registration No. 28,732

Attorney Docket No. L7307.01120
STEVENS DAVIS, MILLER & MOSHER, L.L.P.
1615 L Street, N.W., Suite 850
P.O. Box 34387
Washington, D.C. 20043-4387
Telephone: (202) 785-0100
Facsimile: (202) 408-5200